

WHAT IS CLAIMED IS:

5 1. A prilling method to prill a shear-thinnable mixture comprising the steps of:

- 5 a) providing a molten first component;
b) mixing at least a second component with said molten first component;
c) reacting said components to form a shear-thinnable mixture; and
d) prilling said shear-thinnable mixture wherein said prilling comprises mechanically agitating in the prill head to shear thin said shear-thinnable mixture sufficiently to permit prilling.

10 2. The method according to claim 1 wherein said shear-thinnable mixture is a melt slurry.

15 3. The method according to claim 1 wherein said first component is ammonium nitrate and said second component is ammonium sulfate.

20 4. The method according to claim 1 wherein said shear-thinnable mixture comprises no more than about 2 weight percent water.

25 5. The method according to claim 3 wherein said shear-thinnable mixture further comprises micronutrients.

30 6. The method according to claim 1 wherein said prill head is one of a rotating bucket with a stationary blade, a stationary bucket with rotating scrapers and blades, and an agitated, pressurized nozzle assembly.

35 7. A prilling method to prill a shear-thinnable mixture through small prill holes comprising the steps of:

- a) providing a molten first component;
b) mixing at least a second component with said molten first component;
c) reacting said components to form a shear-thinnable mixture; and
d) prilling said shear-thinnable mixture wherein said prilling comprises mechanically agitating in the prill head to shear thin said shear-thinnable mixture sufficiently and providing surface-wiping blades to permit prilling.

8. The method according to claim 7 wherein said first component is ammonium nitrate and said second component is ammonium sulfate.

9. The method according to claim 7 wherein said shear-thinnable mixture comprises no more than about 2 weight percent water.
10. The method according to claim 7 wherein said shear-thinnable mixture further comprises micronutrients.
11. An apparatus for prilling comprising:
a prill head having means to mechanically agitate to shear thin a shear-thinnable mixture.
12. The apparatus according to claim 11 wherein said prill head is one of a rotating bucket with a stationary blade, a stationary bucket with rotating scrapers and blades, and an agitated pressurized nozzle assembly.
13. The apparatus according to claim 11 where said means to mechanically agitate further comprises surface-wiping blades.

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